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T-39-13



SEMICONDUCTOR

TECHNICAL DATA

TOSHIBA FIELD EFFECT TRANSISTOR

2SK388

SILICON N CHANNEL MOS TYPE

(π-MOS)

HIGH SPEED, HIGH VOLTAGE SWITCHING APPLICATIONS.

SWITCHING REGULATOR, DC-DC CONVERTER AND MOTOR DRIVE APPLICATIONS.

FEATURES:

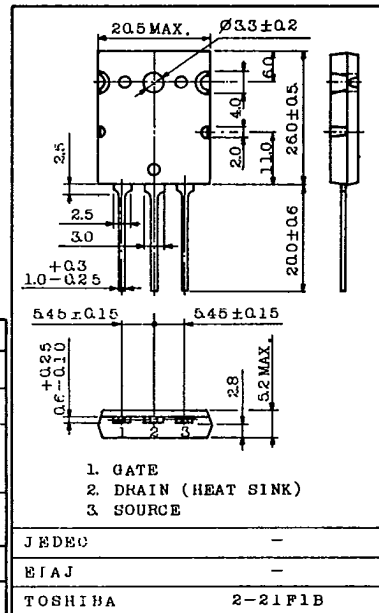
- Low Drain-Source ON Resistance : $R_{DS(ON)}=0.2\Omega$ (Typ.)
- High Forward Transfer Admittance : $|Y_{fs}|=6S$ (Typ.)
- Low Leakage Current : $I_{GSS}=\pm 100nA$ (Max.) @ $V_{GS}=\pm 20V$
 $I_{DSS}=1mA$ (Max.) @ $V_{DS}=250V$
- Enhancement-Mode : $V_{th}=1.5\sim 3.5V$ @ $I_D=1mA$

MAXIMUM RATINGS ($T_a=25^\circ C$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DSX}	250	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current	DC	I_D	12
	Pulse	I_{DP}	30
Drain Power Dissipation ($T_c=25^\circ C$)	P_D	150	W
Channel Temperature	T_{ch}	150	$^\circ C$
Storage Temperature Range	T_{stg}	$-55\sim 150$	$^\circ C$

INDUSTRIAL APPLICATIONS

Unit in mm



Weight : 9.7g

ELECTRICAL CHARACTERISTICS ($T_a=25^\circ C$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Gate Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0$	-	-	± 100	nA	
Drain Cut-off Current	I_{DSS}	$V_{DS}=250V, V_{GS}=0$	-	-	1.0	mA	
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D=10mA, V_{GS}=0$	250	-	-	V	
Gate Threshold Voltage	V_{th}	$V_{DS}=10V, I_D=1mA$	1.5	-	3.5	V	
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS}=10V, I_D=10A$	3	6	-	S	
Drain-Source ON Resistance	$R_{DS(ON)}$	$I_D=10A, V_{GS}=10V$	-	0.20	0.25	Ω	
Drain-Source ON Voltage	$V_{DS(ON)}$	$I_D=10A, V_{GS}=10V$	-	2.0	2.5	V	
Input Capacitance	C_{iss}	$V_{DS}=10V, V_{GS}=0, f=1MHz$	-	1600	2000	pF	
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=10V, V_{GS}=0, f=1MHz$	-	220	320	pF	
Output Capacitance	C_{oss}	$V_{DS}=10V, V_{GS}=0, f=1MHz$	-	570	700	pF	
Switching Time	Rise Time	t_r		-	110	220	ns
	Turn-on Time	t_{on}		-	130	260	ns
	Fall Time	t_f		-	100	200	ns
	Turn-off Time	t_{off}		-	320	640	ns

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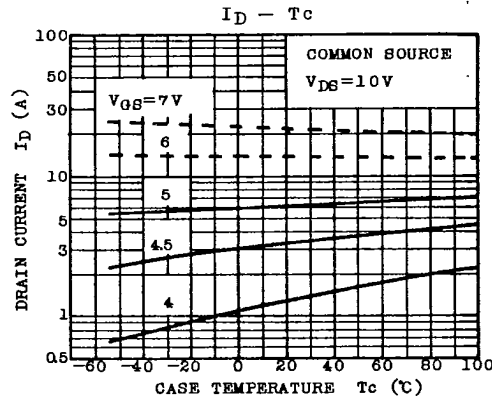
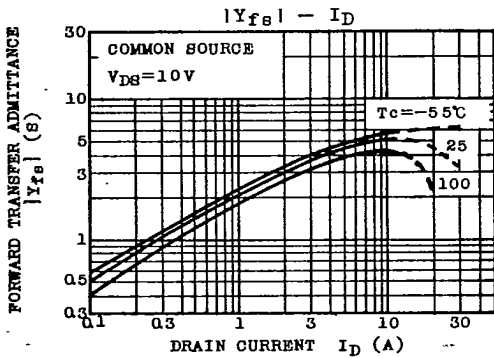
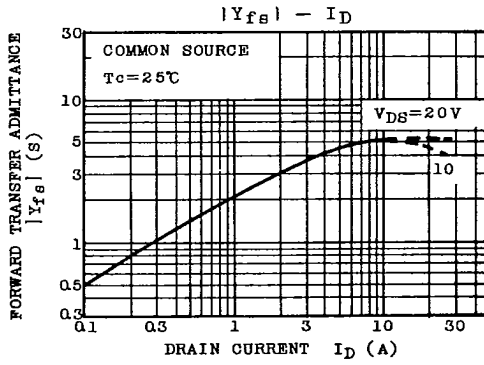
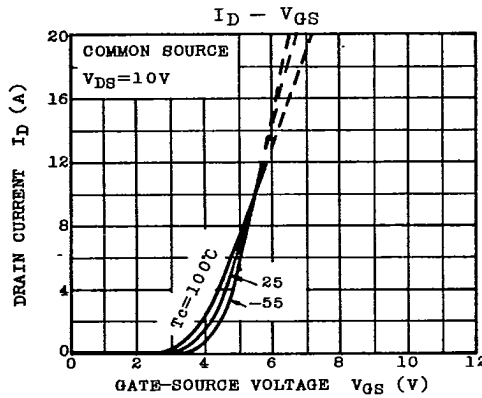
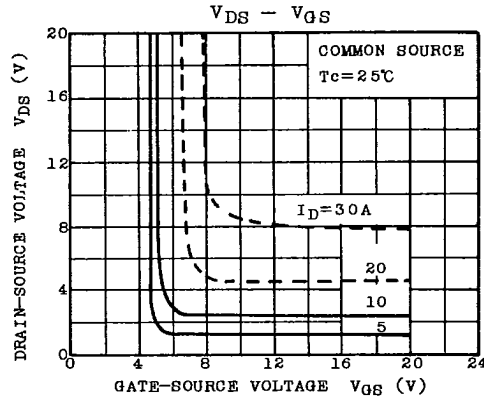
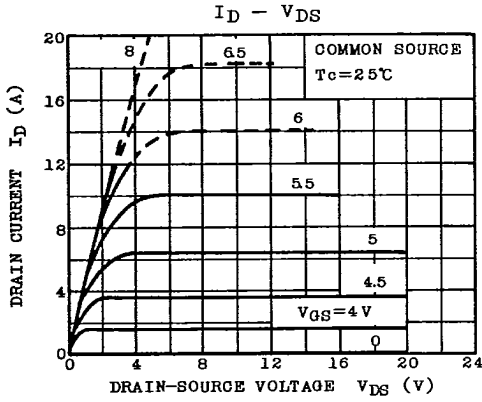
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9097250 TOSHIBA (DISCRETE/OPTO)

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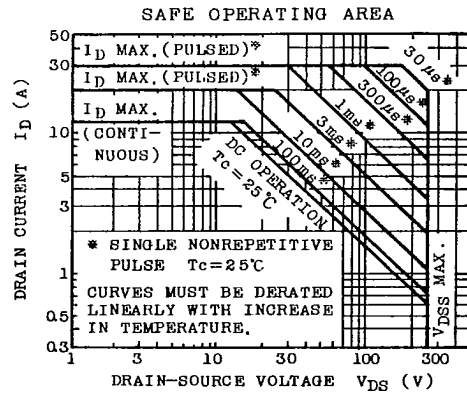
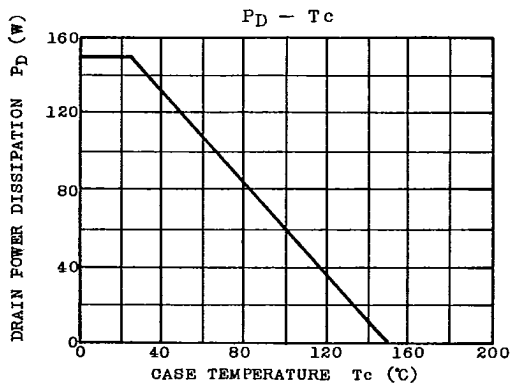
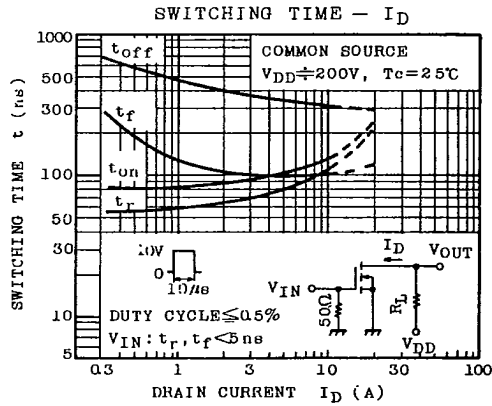
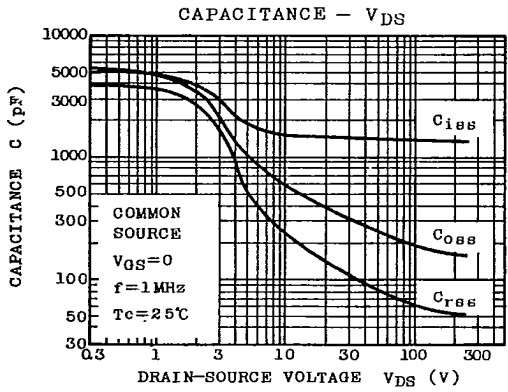
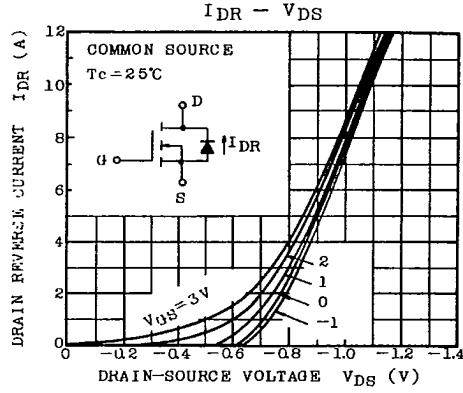
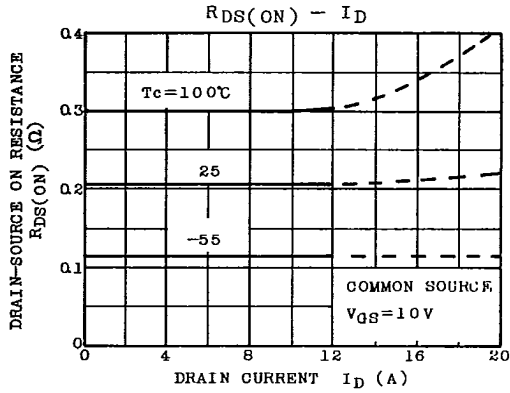
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